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CONSTRUCTING A FARM BUILDING IN ONTARIO

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(Replaces OMAFRA Factsheet *Constructing a Farm Building in Ontario*, Order No. 03-119)

Whether building new or modifying an existing farm building, you must consider building code regulations. Farm building construction in Ontario is primarily regulated by the Ontario Building Code 1997. As a farm owner in Ontario, you are responsible for obtaining a **building permit for all agricultural construction projects.** Manure storage facilities, grain bins and silos all are defined as "farm buildings", and along with all other farm structures, also require building permits. For structures that store nutrient materials, Ontario Regulation 267/03 of the Nutrient Management Act, 2002 establishes mandatory construction protocols to follow.

This Factsheet summarizes the various codes in effect at time of printing and outlines procedures to follow when constructing a farm building in Ontario.

FARM BUILDINGS AND THE ONTARIO BUILDING CODE

The Ontario Building Code 1997 allows farm building construction to be regulated by the National Farm Building Code of Canada 1995 (NFBC). The National Farm Building Code provides additional requirements beyond those found in the Ontario Building Code. In some cases the code requirements are lower for farm buildings.

For the purposes of the Ontario and National Farm Building Codes, a farm building is defined as follows:

> Farm Building means a building or part thereof which does not contain a residential occupancy and which is associated with and located on land devoted to the practice of farming and used essentially for the housing of equipment or livestock, or the production, storage or processing of agricultural and horticultural produce or feeds.

Another term that often applies to farm buildings is "low human occupancy". This is defined as a situation where the occupant load is not more than one person per 40 m^2 (430 ft^2).

THE ONTARIO BUILDING CODE ACT, 1997

In Ontario, this is the act that deals with the issuance of building permits, the powers and duties of building officials and inspectors, and gives the Ontario Building Code its legal standing.

ONTARIO BUILDING CODE, 1997

This is a regulation under the Ontario Building Code Act, based to a large extent on the National Building Code of Canada, 1995.

The Ontario Building Code was written to protect the public from injury due to building failure. Because of the increasing complexity of building projects, there is an increased need for building regulation. Building departments in municipalities throughout Ontario enforce the provincial and national building code requirements related to farm buildings.

The building official is required to make several site visits at various stages of construction. It is the responsibility of the owner, or contractor if appropriate, to notify building officials at these critical stages. In the event of a building or component failure, the building official and their employer municipality is responsible for a project they have approved.

Smaller structures that follow normal construction practices do not need an engineer's design. Municipal building inspectors may ask for drawings prepared by a consulting engineer in more complex situations.

The following are some circumstances where the building official will require additional engineering designs:

- Unusual soil conditions for foundation or footing design, or where footing construction or excavation will influence the foundation system of another structure. For example: building a second tower silo beside an existing one.

- For structures that are heavily loaded. For example: an elevated wet-holding bin and its supporting frame, commonly used in a grain drying operation.

- For the design of structural components that go beyond standard design tables available for farm structures. For example: doorway headers or lintels spanning wide openings.

Most farmers want a durable and strong structure. Often, large additional costs are not necessary to provide adequate structural strength. You do, however, need a structurally sound building design and an experienced, knowledgeable builder. In many circumstances, the contractor can provide the building design.

The Canada Plan Service (CPS) provides standard plans and leaflets describing various aspects of farm building construction. These plans/leaflets are available in 10 groups of plans that represent various commodity groups. OMAFRA engineers within the Environmental Policy and Programs Branch can sometimes provide conceptual information, but are not able to provide custom designs for unusual situations.

Figure 1 shows a typical Canada Plan Service Leaflet that describes a detailed plan that is available in the CPS system. All CPS plans and leaflets can be found at *www.cps.gov.on.ca* or by contacting the Agricultural Information Contact Centre.

In Ontario, the Canadian Farm Builders Association is an organization of farm building contractors who have agreed to conduct building projects according to a common set of standards that meet the requirements of appropriate building codes. Contractors that provide service to farmers are encouraged to join this organization. For the benefit of workers on the site, encourage your contractor to take all necessary safety precautions. Where a farmer is deemed to be the contractor or constructor, the farmer assumes all the inherent responsibilities as defined in the Occupational Health and Safety Act and the Regulation for Construction Projects. For projects valued over $50,000 a Notice of Project must be sent to the Ministry of Labour. All construction projects are subject to inspection by the Ministry of Labour.

FIGURE 1. A typical CPS Leaflet describing an available plan.

The following are some additional items to consider when planning the construction of a farm building.

FARMSTEAD PLANNING

When planning a new building or adding to an existing farmstead, you must consider such things as:

- site drainage
- services (lanes, power, water supply, waste disposal)
- security
- space allowance for future expansion
- separation distances for snow and wind control, ventilation and disease control
- distance separation from residences for control of noise and odours
- municipal regulations
- distance to wells, surface water, catch basins

See the Ontario Ministry of Agriculture, Food and Rural Affairs website at *www.omafra.gov.on.ca* for Factsheets, Best Management Practice documents and publications

pertaining to the planning of farm buildings and manure storage structures.

Check with your local municipality early in the planning stage. The construction of a livestock facility is usually permitted only in agricultural zones. In addition, setback distances from roads, lot lines, neighbouring houses and land uses often restrict the location of a livestock facility. Usually these setback distances are based on Minimum Distance Separation formulae and take into account:

- number of animals on the site before and after the proposed expansion
- type of livestock
- livestock and manure management system
- type of manure storage structure

The Minimum Distance Separation calculations can be used to determine the potential for livestock or poultry production facilities at that location. Using MDS, it is possible to determine the buffer zones needed for various sizes of operations and see if there are conflicts. Because of these buffer zones, larger parcels of land have more potential for establishing and expanding livestock and poultry operations.

STRUCTURAL REQUIREMENTS

The structural loads that the building must withstand include:

- snow
- rain (especially when saturating accumulated snow)
- wind (wind bracing must be present in all agricultural structures)
- weight of equipment, feed, manure, etc.
- weight of equipment such as tractors, wagons, etc.

A combination of snow and rain loads apply to roof structures and to the beams and plates that support them. Truss manufacturers are able to supply the correct truss design for a building provided they know the location, the type of use (low or high human occupancy) and the position of the roof relative to other buildings, trees, etc. The roof snow load can vary from about half of the ground snow load to three times depending on whether the roof is windswept, sheltered or subjected to sliding and drifting snow from higher structures. Make sure the truss supplier knows where the trusses will be placed.

Wind loads are a special problem in many types of agricultural structures. Various methods of bracing are available:

- knee braces
- steel roof or ceiling diaphragms
- buttresses
  portal frames

All wind bracing and any of the above options require design by a structural engineer.

Beams, plates and posts require individual design. Make sure a qualified structural engineer specifies both the beam size and the method of fastening. For standard post-frame buildings, contractors and building officials should be able to verify the size of plate, post, foundation, etc. for most areas within the province. OMAFRA engineers have developed a set of standard practices for post-frame structures. These are available in OMAFRA Publication 809, *Farm Building Standards*.

SITE INVESTIGATION

Prior to constructing a nutrient or manure storage structure, a site investigation may be required to determine soil properties and permanent water table location. It is important to build a structure that will provide an appropriate level of protection for ground and surface water. A geotechnical investigation may also be required to properly design a foundation system for a heavily loaded structure, such as a tower silo.

CONTRACTS

Contracts protect both parties — the builder and owner. Make sure you get the protection you need in a contract. If you must meet deadlines, the contract must include deadlines and penalties.

The contract need not be long. The fine print and guarantees are only as good as your contractor, and the more fine print you add, the greater will be the cost. Usually, contracts with a lot of fine print are written to protect the contractor.

The contract should include:

- name of client and contractor
- site information, name of registered owner of site
- source of financing
- authorization to obtain credit information
- building cost and payment schedule
- building plans and specifications
- owner's responsibility list
- contractor's responsibility list
- signatures of both parties

Source: Canadian Farm Builders' Association Guidelines.

SUMMARY

Planning is critical in the process of constructing a farm building in Ontario. Municipal building officials are enforcing farm building construction to a larger degree. It is important to know what the building inspector expects from you. Anticipate that you will be asked to comply with regulations pertaining to the following:

- Ontario Building Code
- National Farm Building Code of Canada
- Nutrient Management Act
- Lightning Rods Act
- Gasoline Handling Act
- Pesticides Act
- municipal zoning bylaws
- siting of livestock buildings and manure storage structures using Minimum Distance Separation formula
- various other codes in effect

Always allow extra time in advance of your starting date to ensure that the requirements have all been met.

Regulation is important to ensure that siting and safety issues are addressed. Proper consideration of these items in co-operation with your contractor and building official will, in most circumstances, result in a building project that will integrate well with your current livestock operation or farmstead.

Do you know about Ontario's new Nutrient Management Act?

The provincial Nutrient Management Act (NMA) and the Regulation 267/03 regulates the storage, handling and application of nutrients that could be applied to agricultural crop land. The objective is to protect Ontario's surface and groundwater resources.

Please consult the regulation and protocols for the specific legal details. This Factsheet is not meant to provide legal advice. Consult your lawyer if you have questions about your legal obligations.

For more information on the NMA call the Nutrient Management Information Line at 1-866-242-4460, e-mail *nman@omafra.gov.on.ca* or visit *www.omafra.gov.on.ca*.

Factsheets are continually being updated so please ensure that you have the most recent version.

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